

110TH CONGRESS
1ST SESSION

S. 1581

To establish an interagency committee to develop an ocean acidification research and monitoring plan and to establish an ocean acidification program within the National Oceanic and Atmospheric Administration.

IN THE SENATE OF THE UNITED STATES

JUNE 7, 2007

Mr. LAUTENBERG (for himself and Ms. CANTWELL) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To establish an interagency committee to develop an ocean acidification research and monitoring plan and to establish an ocean acidification program within the National Oceanic and Atmospheric Administration.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Federal Ocean Acidification Research And Monitoring
6 Act of 2007” or the “FOARAM Act”.

7 (b) TABLE OF CONTENTS.—The table of contents for
8 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings and purposes.
- Sec. 3. Interagency committee on ocean acidification.
- Sec. 4. Strategic research and implementation plan.
- Sec. 5. NOAA ocean acidification program.
- Sec. 6. Definitions.
- Sec. 7. Authorization of appropriations.

1 **SEC. 2. FINDINGS AND PURPOSES.**

2 (a) FINDINGS.—The Congress finds the following:

3 (1) The oceans help mitigate the effects of glob-
 4 al warming by absorbing atmospheric carbon diox-
 5 ide. About a third of anthropogenic carbon dioxide
 6 is currently absorbed by the ocean.

7 (2) The rapid increase in atmospheric carbon
 8 dioxide is overwhelming the natural ability of the
 9 oceans to cope with human-induced carbon dioxide
 10 emissions.

11 (3) The emission of carbon dioxide into the at-
 12 mosphere is causing the oceans to become more
 13 acidic. The increase in acidity and changes in ocean
 14 chemistry are corrosive to marine shells and orga-
 15 nisms that form the base of the food chain for many
 16 fish and marine mammals including the skeletons of
 17 corals which provide one of the richest habitats on
 18 earth.

19 (4) The rich biodiversity of marine organisms is
 20 an important contribution to the national economy
 21 and the change in ocean chemistry threatens our

1 fisheries and marine environmental quality, and
2 could result in significant social and economic costs.

3 (5) Existing Federal programs support research
4 in related ocean chemistry, but gaps in funding, co-
5 ordination, and outreach have impeded national
6 progress in addressing ocean acidification.

7 (6) National investment in a coordinated pro-
8 gram of research and monitoring would improve the
9 understanding of ocean acidification effects on whole
10 ecosystems, advance our knowledge of the socio-eco-
11 nomic impacts of increased ocean acidification, and
12 strengthen the ability of marine resource managers
13 to assess and prepare for the harmful impacts of
14 ocean acidification on our marine resources.

15 (b) PURPOSES.—The purposes of this Act are to pro-
16 vide for—

17 (1) development and coordination of a com-
18 prehensive interagency plan to monitor and conduct
19 research on the processes and consequences of ocean
20 acidification on marine organisms and ecosystems
21 and to establish an ocean acidification program
22 within the National Oceanic and Atmospheric Ad-
23 ministration; and

24 (2) assessment and consideration of regional
25 and national ecosystem and socio-economic impacts

1 of increased ocean acidification, and integration into
2 marine resource decisions.

3 **SEC. 3. INTERAGENCY COMMITTEE ON OCEAN ACIDIFICA-**
4 **TION.**

5 (a) ESTABLISHMENT.—

6 (1) IN GENERAL.—There is hereby established
7 an Interagency Committee on Ocean Acidification.

8 (2) MEMBERSHIP.—The Committee shall be
9 comprised of senior representatives from the Na-
10 tional Oceanic and Atmospheric Administration, the
11 National Science Foundation, the National Aero-
12 nautics and Space Administration, the United States
13 Geological Survey, the United States Fish and Wild-
14 life Service, the Environmental Protection Agency,
15 the Department of Energy, and such other Federal
16 agencies as the Secretary considers appropriate.

17 (3) CHAIRMAN.—The Committee shall be
18 chaired by the representative from the National Oce-
19 anic and Atmospheric Administration. The chairman
20 may create subcommittees chaired by any member
21 agency of the committee. Working groups may be
22 formed by the full Committee to address issues that
23 may require more specialized expertise than is pro-
24 vided by existing subcommittees.

1 (b) PURPOSE.—The Committee shall oversee the
2 planning, establishment, and coordination of a plan de-
3 signed to improve the understanding of the role of in-
4 creased ocean acidification on marine ecosystems.

5 (c) REPORTS TO CONGRESS.—

6 (1) STRATEGIC RESEARCH AND IMPLEMENTA-
7 TION PLAN.—The Committee shall submit the stra-
8 tegic research and implementation plan established
9 under section 4 to the Senate Committee on Com-
10 merce, Science, and Transportation and the House
11 of Representatives Committee on Natural Resources.

12 (2) TRIENNIAL REPORT.—Not later than 2
13 years after the date of the enactment of this Act and
14 every 3 years thereafter, the Committee shall trans-
15 mit a report to the Senate Committee on Commerce,
16 Science, and Transportation and the House of Rep-
17 resentatives Committee on Natural Resources that
18 includes—

19 (A) a summary of federally funded ocean
20 acidification research and monitoring activities,
21 including the budget for each of these activities;
22 and

23 (B) an analysis of the progress made to-
24 ward achieving the goals and priorities for the
25 interagency research plan developed by the

1 Committee under section 4 and recommenda-
2 tions for future activities.

3 **SEC. 4. STRATEGIC RESEARCH AND IMPLEMENTATION**
4 **PLAN.**

5 (a) IN GENERAL.—Within 1 year after the date of
6 enactment of this Act, the Committee shall develop a stra-
7 tegic research and implementation plan for coordinated
8 Federal activities. In developing the plan, the Committee
9 shall consider and use reports and studies conducted by
10 Federal agencies and departments, the National Research
11 Council, the Ocean Research and Resources Advisory
12 Panel, the Joint Subcommittee on Ocean, Science, and
13 Technology of the National Science and Technology Coun-
14 cil, the Joint Ocean Commission Initiative, and other ex-
15 pert scientific bodies.

16 (b) SCOPE.—The plan shall—

17 (1) provide for interdisciplinary research among
18 the ocean sciences, and coordinated research and ac-
19 tivities to improve understanding of ocean acidifica-
20 tion that will affect marine ecosystems and to assess
21 the potential and realized socio-economic impact of
22 ocean acidification, including—

23 (A) effects of atmospheric carbon dioxide
24 on ocean chemistry;

1 (B) biological impacts of ocean acidifica-
 2 tion, including research on—

3 (i) commercially and recreationally
 4 important species and ecologically impor-
 5 tant calcifiers that lie at the base of the
 6 food chain; and

7 (ii) physiological changes in response
 8 to ocean acidification;

9 (C) identification and assessment of eco-
 10 systems most at risk from projected changes in
 11 ocean chemistry including—

12 (i) coral reef ecosystems;

13 (ii) polar ecosystems; and

14 (iii) coastal ocean ecosystems;

15 (D) modeling the effects of pH including
 16 ecosystem forecasting;

17 (E) identifying feedback mechanisms re-
 18 sulting from the ocean chemistry changes and
 19 the subsequent decrease in calcification rates in
 20 organisms;

21 (F) socio-economic impacts of ocean acidi-
 22 fication, including commercially and
 23 recreationally important fisheries;

1 (2) establish, for the 10-year period beginning
2 in the year it is submitted, goals, priorities, and
3 guidelines for coordinated activities that will—

4 (A) most effectively advance scientific un-
5 derstanding of the characteristics and impacts
6 of ocean acidification;

7 (B) provide forecasts of changes in ocean
8 acidification and the consequent impacts on ma-
9 rine ecosystems; and

10 (C) provide a basis for policy decisions to
11 reduce and manage ocean acidification and its
12 environmental impacts;

13 (3) provide an estimate of Federal funding re-
14 quirements for research and monitoring activities;
15 and

16 (4) identify and strengthen relevant programs
17 and activities of the Federal agencies and depart-
18 ments that would contribute to accomplishing the
19 goals of the plan and prevent unnecessary duplica-
20 tion of efforts, including making recommendations
21 for the use of observing systems and technological
22 research and development.

23 **SEC. 5. NOAA OCEAN ACIDIFICATION PROGRAM.**

24 (a) IN GENERAL.—The Secretary shall establish and
25 maintain an ocean acidification program within the Na-

1 tional Oceanic and Atmospheric Administration to imple-
2 ment activities consistent with the strategic research and
3 implementation plan developed by the Committee under
4 section 4 that—

5 (1) includes—

6 (A) interdisciplinary research among the
7 ocean sciences, and coordinated research and
8 activities to improve understanding of ocean
9 acidification;

10 (B) the establishment of a long-term moni-
11 toring program of pH levels in the ocean uti-
12 lizing existing global ocean observing assets and
13 adding instrumentation and sampling stations
14 as appropriate to the aims of the research pro-
15 gram;

16 (C) educational opportunities that encour-
17 age an interdisciplinary and international ap-
18 proach to exploring the impacts of ocean acidifi-
19 cation;

20 (D) national public outreach activities to
21 improve the understanding of ocean acidifica-
22 tion and its impacts on marine resources; and

23 (E) coordination of ocean acidification
24 monitoring and impacts research with other ap-
25 propriate international ocean science bodies

1 such as the International Oceanographic Com-
2 mission, the International Council for the Ex-
3 ploration of the Sea, the North Pacific Marine
4 Science Organization, and others;

5 (2) provides grants for critical research projects
6 that explore the effects of ocean acidification on eco-
7 systems and the socio-economic impacts of increased
8 ocean acidification that are relevant to the goals and
9 priorities of the strategic research plan; and

10 (3) incorporates a competitive merit-based
11 grant process that may be conducted jointly with
12 other participating agencies or under the National
13 Oceanographic Partnership Program under section
14 7901 of title 10, United States Code.

15 (b) **ADDITIONAL AUTHORITY.**—In conducting the
16 Program, the Secretary may enter into and perform such
17 contracts, leases, grants, or cooperative agreements as
18 may be necessary to carry out the purposes of this Act
19 on such terms as the Secretary deems appropriate.

20 **SEC. 6. DEFINITIONS.**

21 In this Act:

22 (1) **COMMITTEE.**—The term “Committee”
23 means the Interagency Committee on Ocean Acidifi-
24 cation established by section 3(a).

1 (2) OCEAN ACIDIFICATION.—The term “ocean
2 acidification” means the decrease in the pH of the
3 Earth’s oceans caused by the uptake of anthropo-
4 genic carbon dioxide from the atmosphere.

5 (3) PROGRAM.—The term “Program” means
6 the National Oceanic and Atmospheric Administra-
7 tion Ocean Acidification Program established under
8 section 5.

9 (4) SECRETARY.—The term “Secretary” means
10 the Secretary of Commerce, acting through the Ad-
11 ministrator of the National Oceanic and Atmos-
12 pheric Administration.

13 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

14 (a) IN GENERAL.—There are authorized to be appro-
15 priated to the National Oceanic and Atmospheric Adminis-
16 tration \$30,000,000 to carry out the purposes of this Act
17 for each of fiscal years 2008 through 2012, and such sums
18 as may be necessary for fiscal years after fiscal year 2012.

19 (b) ALLOCATION.—

20 (1) Of the amounts made available to carry out
21 this Act for a fiscal year, the Secretary shall allocate
22 at least 60 percent to other departments and agen-
23 cies to carry out the priorities of the plan developed
24 by the Committee.

1 (2) Of the amounts made available to carry out
2 this Act for any fiscal year, the Secretary, and other
3 departments and agencies to which amounts are al-
4 located under paragraph (1), shall allocate at least
5 50 percent for competitive grants.

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